

12 October 1992

**ELECTRICAL POWER PRODUCTION**

1. **Objective.** As prescribed in AFR 8-10, this Air National Guard Manpower Standard (ANGMS) quantifies the full-time manpower requirement to accomplish the tasks described in the work center description (WCD) for varying levels of workload volume.
2. **Authority.** The 85- and 91-series of Air Force (AF) and Air National Guard (ANG) directives contain AF and ANG policy and procedural guidance for the Electrical Power Production function. This ANGMS has been developed in accordance with procedures contained in AFR 25-5 and is the result of a functional review.
3. **Applicability.** This standard applies to all Air Combat Command (ACC) gained Air National Guard flying units. It excludes the four Air National Guard bases at Buckley, CO; Otis, MA; Rickenbacker, OH; and Selfridge, MI.
4. **Standard Data:**
  - a. **Classification.** Type III.
  - b. **Approval Date.** 10 Dec 91.
  - c. **Manpower Data Source.** Staffing Pattern.
  - d. **Standard Manpower Equation.**  $Y = 2$  (Constant Manpower).
  - e. **Workload Factor:** N/A
5. **Application Instructions.** Apply this standard using the manpower equation in Para 4d.
6. **Statement of Conditions.** This work center's normal hours of operation are 40 hours per week with a variance in daily operating hours from an 8 hour/5 day week, a 10 hour/4 day week, or a 9 hour/5 day week combined with a 3 day/9 hour and a 1 day/8 hour week.

**BY ORDER OF THE SECRETARY OF THE AIR FORCE:**

**JOHN B. CONAWAY**  
Lieutenant General, USAF  
Chief, National Guard Bureau

**OFFICIAL**

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Director  
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**2 Attachments**  
1. **Work Center Description**  
2. **Standard Manpower Table**

**No. of Printed Pages: 9**  
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**WORK CENTER DESCRIPTION****Electrical Power Production****DIRECT:****1. UNMANNED EMERGENCY ELECTRICAL DIESEL POWER GENERATING UNIT:**

**1.1. INSTALLS UNIT.** Installs diesel generator unit to be used as an emergency source of electrical power. Includes initial servicing and exercising unit to ensure correct operation. Covers initial installation of permanently installed unit only. Ensure generator properly phased to load by use of phase sequence indicator.

**1.2. REMOVES UNIT.** Removes diesel generator unit when no longer required as an emergency source of electrical power or when necessary for overhaul. Prepares unit for shipment to depot or contractor.

**1.3. REPLACES UNIT.** Replaces or reinstalls diesel generator unit removed for overhaul. Services and exercises unit to ensure proper operation.

**1.4. PERFORMS PREVENTIVE MAINTENANCE:**

**1.4.1. EXERCISES UNIT.** Exercises emergency power diesel generating unit on a regularly scheduled basis. Inspects, adjusts, and performs minor repair and cleaning of unit. Completes required maintenance documentation.

**1.4.2. INSPECTS UNIT.** Completes inspection of emergency power diesel generating system at weekly, quarterly, semiannual, and annual intervals as prescribed by appropriate technical order. Completes required maintenance documentation.

**1.4.3. TESTS OIL SAMPLE.** Tests oil sample drawn during exercise of emergency power diesel generating system to ensure proper lubrication.

**1.4.4. CHANGES ENGINE OIL.** Drains and replenishes oil and replaces oil filter based on hours of unit operation or presence of contaminants on diesel unit. Completes required maintenance documentation.

**1.4.5. REFUELS UNIT.** Replenishes fuel in tank of unmanned emergency electrical power generating unit.

**1.5. PERFORMS UNSCHEDULED MAINTENANCE.** Performs unscheduled maintenance on diesel generator unit. Estimates cost, troubleshoots, repairs, removes, and replaces component part of emergency power generating unit.

**1.6. INSTALLS AND REMOVES EQUIPMENT AUTHORIZATION INVENTORY DATE (EAID) UNIT:**

**1.6.1. INSTALLS EAID UNIT.** Installs EAID portable emergency power diesel generating unit to act as an emergency source of power. Transports unit to installation site, installs and connects unit, and ensures proper operation.

**1.6.2. REMOVES EAID UNIT.** Removes EAID portable emergency power diesel generating unit when no longer required. Disconnects unit and transports to appropriate storage area.

**1.7. MAINTAINS BATTERY:**

**1.7.1. ACTIVATES BATTERY.** Activates new battery received from supply by adding electrolyte and connecting battery to charger.

**1.7.2. DEACTIVATES BATTERY.** Deactivates battery for turn in by neutralizing and draining acid.

**1.7.3. SERVICES BATTERY.** Maintains battery currently in use by cleaning, testing, adding electrolyte, and connecting battery to charger.

**1.7.4. MONITORS BATTERY CHARGER.** Maintains surveillance over battery while connected to battery charger.

**1.8. TRAINS OPERATOR.** Provides annual emergency generator training to using activity personnel and issues certificate of competency.

**2. UNMANNED EMERGENCY ELECTRICAL GASOLINE POWER GENERATING UNIT:**

**2.1. INSTALLS UNIT.** Installs gasoline generator unit to be used as an emergency source of electrical power. Includes initial servicing and exercising unit to ensure correct operation. Covers initial installation of permanently installed unit only. Ensures generator properly phased to load by use of phase sequence indicator.

**2.2. REMOVES UNIT.** Removes gasoline generator unit when no longer required as an emergency source of electrical power or when necessary for overhaul. Prepares unit for shipment to depot or contractor.

**2.3. REPLACES UNIT.** Replaces or reinstalls gasoline generator unit removed for overhaul. Services and exercises unit to ensure proper operation.

**2.4. PERFORMS PREVENTIVE MAINTENANCE:**

**2.4.1. EXERCISES UNIT.** Exercises emergency power gasoline generating unit on a regularly scheduled basis. Inspects, adjusts, and performs minor repair and cleaning of unit. Completes required maintenance documentation.

**2.4.2. INSPECTS UNIT.** Completes inspection of emergency power gasoline generating system at semimonthly, semiannual, and annual intervals as prescribed by applicable technical order. Completes required maintenance documentation.

**2.4.3. TESTS OIL SAMPLE.** Tests oil sample drawn during exercise of emergency power gasoline generating system to ensure proper lubrication.

**2.4.4. CHANGES ENGINE OIL.** Drains and replenishes oil and replaces oil filter based on hours of unit operation or presence of contaminants on gasoline unit. Completes required maintenance documentation.

**2.4.5. REFUELS UNIT.** Replenishes fuel in tank of unmanned emergency electrical power generating unit.

**2.5. PERFORMS UNSCHEDULED MAINTENANCE.** Performs unscheduled maintenance on gasoline generator unit. Estimates cost, troubleshoots, repairs, removes, and replaces component part of emergency power generating system. Completes required maintenance documentation.

**2.6. INSTALLS AND REMOVES EAID UNIT:**

**2.6.1. INSTALLS EAID UNIT.** Installs EAID portable gasoline emergency power generating unit to act as an emergency source of power. Transports unit to installation site, installs and connects unit, and ensures proper operation.

**2.6.2. REMOVES EAID UNIT.** Removes EAID portable emergency power gasoline generating unit when no longer required. Disconnects and transports unit to appropriate storage area.

**2.7. MAINTAINS BATTERY:**

**2.7.1. ACTIVATES BATTERY.** Activates new battery received from supply by adding electrolyte and connecting battery to charger.

**2.7.2. DEACTIVATES BATTERY.** Deactivates battery for turn in by neutralizing and draining acid.

**2.7.3. SERVICES BATTERY.** Maintains battery currently in use by cleaning, testing, adding electrolyte, and connecting battery to charger.

**2.7.4. MONITORS BATTERY CHARGER.** Maintains surveillance over battery while connected to battery charger.

**2.8. TRAINS OPERATOR.** Provides emergency generator operator training to using activity personnel and issues certificate of competency.

**3. AUTOMATIC TRANSFER PANEL:**

**3.1. INSTALLS UNIT.** Installs automatic transfer panel used to transfer an electrical load from a failed primary source to an emergency source of power. Includes initial installation and servicing as well as exercising unit to ensure correct operation.

**3.2. ESTIMATES MAN-HOURS, MATERIALS, AND EQUIPMENT.**

**3.3. REMOVES UNIT.** Removes automatic transfer panel when no longer required and prepares for shipment to depot or manufacturer.

**3.4. REPLACES UNIT.** Replaces or reinstalls automatic transfer panel removed for overhaul. Services and exercises unit to ensure proper operation.

**3.5. PERFORMS PREVENTIVE MAINTENANCE:**

**3.5.1. EXERCISES UNIT.** Exercises automatic transfer panel on a regularly scheduled basis. Inspects, adjusts, and performs minor repair and cleaning of unit. Completes required maintenance documentation.

**3.5.2. INSPECTS UNIT.** Completes inspection of automatic transfer panel at semimonthly, semiannual, and annual intervals as prescribed by applicable technical order. Completes required maintenance documentation.

**3.6. PERFORMS UNSCHEDULED MAINTENANCE.** Performs unscheduled maintenance on automatic transfer panel. Estimates cost, troubleshoots, repairs, removes, and replaces component part in unit. Completes required maintenance documentation.

**4. WATER SYSTEM ENGINE MAINTENANCE:**

**4.1. INSTALLS ENGINE.** Installs diesel, gasoline, or natural gas water system engine.

**4.2. PERFORMS PREVENTIVE MAINTENANCE:**

**4.2.1. EXERCISES UNIT.** Exercises engine on a regularly scheduled basis. Inspects, adjusts, and performs minor repair and cleaning of unit. Completes required maintenance documentation.

**4.2.2. TESTS OIL SAMPLE.** Tests oil sample drawn during exercise of engine to ensure proper lubrication.

**4.2.3. CHANGES ENGINE OIL.** Drains and replenishes oil and replaces oil filter based on hours of unit operation or presence of contaminants. Completes required maintenance documentation.

**4.3. PERFORMS UNSCHEDULED MAINTENANCE.** Performs unscheduled maintenance on diesel, gasoline, or natural gas water system engine. Estimates cost, troubleshoots, repairs, removes, and replaces component part of engine. Completes required maintenance documentation.

**4.4. TRAINS OPERATOR.** Provides emergency engine operator training to using activity personnel and issues certificate of competency.

**5. BAK-9 AIRCRAFT ARRESTING SYSTEM SUPPORT:**

**5.1. PERFORMS PERIODIC INSPECTION.** Performs daily, weekly, monthly, semiannual, or annual inspection in accordance with applicable technical order to ensure the operational capability of the BAK-9 aircraft arresting system. Completes required maintenance documentation associated with the inspection and coordinates with appropriate agency concerning barrier commission status.

**5.2. PERFORMS PREVENTIVE RECURRING MAINTENANCE:**

**5.2.1. REPLACES CABLE.** Replaces runway pendant cable in accordance with applicable Technical Order (T.O.). Notifies all required agencies of time cable barrier will be out of service.

**5.2.2. REPLACES TAPE.** Replaces purchase tape in accordance with applicable T.O. Notifies all agencies of time cable barrier will be out of service.

**5.2.3. TURNS TAPE.** Turns purchase tape end for end after 24-months service. Notifies all agencies of time cable barrier will be out of service.

**5.2.4. CROPS TAPE.** Crops tape and notifies all required agencies of time cable barrier will be out of service.

**5.3. PERFORMS UNSCHEDULED MAINTENANCE.** Performs any required unscheduled maintenance. Includes completion of Time Compliance Technical Order (TCTO). Notified all required agencies of time cable barrier will be out of service. Provides required cost estimates of repair parts and equipment to Production Control.

**5.4. PERFORMS MAJOR MAINTENANCE.** Performs major maintenance on arresting gear to include disassembly, inspection, overhaul, lubrication, and reassembly of an aircraft arresting system. Includes brake change and deck sleeve overhaul.

**5.5. OPERATES AIRCRAFT ARRESTING SYSTEM (POST-ENGAGEMENT):**

**5.5.1. INSPECTS TAPE.**

**5.5.2. INSPECTS TAPE REEL HUB AND SIDE PLATE.**

**5.5.3. READS AND RECORDS TELL-TALE HYDRAULIC GAUGE READING.**

**5.5.4. READS AND RECORDS MAXIMUM SPEED ON REEL TACHOMETER.**

**5.5.5. REWINDS TAPE.** Rewinds tape while checking runway sheave for rotation, reel end shafts for wobble and drag, shaft bearings for unusual noise, and all drive chains for alignment and security.

**5.5.6. INSPECTS ANCHOR ASSEMBLY FOR SECURITY.**

**5.5.7. INSPECTS ENTIRE SYSTEM FOR LOOSE OR WORN PART.**

**5.5.8. INSPECTS HYDRAULIC SYSTEM FOR LEAK.**

**5.5.9. INSPECTS RESERVOIR FOR FLUID LEVEL.**

**5.5.10. CHECKS ACCUMULATOR FLUID LEVEL AND PRESSURE.**

**5.5.11. CHECKS CAM INDEX.**

**5.5.12. BLEEDS HYDRAULIC SYSTEM.**

**5.5.13. CHECKS HOOK CABLE TENSION.**

**5.5.14. CHECKS CABLE SUPPORT DISC.**

**5.5.15. COMPLETES MAINTENANCE DOCUMENTATION.**

**5.5.16. NOTIFIES AGENCY OF BARRIER STATUS.**

**5.5.17. PUTS IN CLEANUP STATEMENT.**

**5.6. ACTIVATES OR DEACTIVATES ARRESTING SYSTEM.** Activates or deactivates arresting system to accommodate wind direction change. Removes snow or ice from the vicinity of runway edge sheave and entrance to facility housing the aircraft arresting system. Coordinates with appropriate agency concerning barrier commission status.

**5.7. PROVIDES TRAINING.** Provides semiannual training to ensure Fire Department capability to accomplish system activation or deactivation reset following engagement and inspection action. Issues certification competency.

**6. BAK-12 AIRCRAFT ARRESTING SYSTEM SUPPORT:**

**6.1. PERFORMS PERIODIC INSPECTION.** Performs periodic inspection in accordance with applicable technical order to ensure the operational capability of the BAK-12 aircraft arresting system. Completes required maintenance documentation associated with inspection and coordinates barrier commission status with appropriate agency.

**6.1.1. PERFORMS DAILY INSPECTION.**

**6.1.2. PERFORMS WEEKLY INSPECTION.****6.1.3. PERFORMS MONTHLY INSPECTION.****6.2. PERFORMS PREVENTIVE RECURRING MAINTENANCE:**

**6.2.1. REPLACES CABLE.** Replaces runway pendant cable IAW applicable T.O. Notifies all required agencies of time cable barrier will be out of service.

**6.2.2. REPLACES TAPE.** Replaces purchase tape IAW applicable T.O. Notifies all required agencies of time cable barrier will be out of service.

**6.2.3. TURNS TAPE.** Turns purchase tape end for end after 18-months service.

**6.2.4. CROPS TAPE.** Crops that length of tape between runway edge sheave and tape connector IAW applicable T.O.

**6.2.5. SYNCHRONIZES UNIT.** Synchronizes unit and proof tests hydraulic system IAW applicable T.O.

**6.2.6. SERVICES REWIND ENGINE.** Services engine at 3-month interval.

**6.2.7. REPACKS SHEAVE.** Disassembles sheave and packs bearing IAW with applicable T.O.

**6.3. PERFORMS UNSCHEDULED MAINTENANCE.** Performs any required unscheduled maintenance. Includes TCOT. Notifies all required agencies of time barrier will be out of service. Provides required cost estimates of repair parts and equipment to Work Control.

**6.4. PERFORMS MAJOR MAINTENANCE.** Performs major maintenance on arresting gear to include disassembly, inspection, overhaul, lubrication, and reassembly. Includes brake change and major overhaul. Notifies all required agencies of time barrier will be out of service. Provides required cost estimates of repair parts and equipment to Work Control.

**6.5. OPERATES AIRCRAFT ARRESTING SYSTEM (POST-ENGAGEMENT):**

**6.5.1. INSPECTS SYSTEM FOR SECURITY AND LEAK.**

**6.5.2. INSPECTS TAPE SHEAVE, TAPE, AND CABLE.**

**6.5.3. CHECKS FLUID LEVEL.**

**6.5.4. OPERATES REWIND TO RETRACT TAPE AND PRETENSION PENDANT.**

**6.5.5. BLEEDS HYDRAULIC SYSTEM.**

**6.5.6. COMPLETES MAINTENANCE DOCUMENTATION.**

**6.5.7. COORDINATES BARRIER COMMISSION STATUS WITH APPROPRIATE AGENCY.**

**6.6. ACTIVATES OR DEACTIVATES ARRESTING SYSTEM.** Activates or deactivates arresting system to accommodate wind directional change. Removes snow or ice from the vicinity of runway edge sheave and entrance to facility housing aircraft arresting system. Coordinates with appropriate agency concerning barrier commission status.

**6.7. PROVIDES TRAINING.** Provides semi-annual training to ensure Fire Department capability to accomplish system activation or deactivation reset following engagement and inspection action. Issues certificate of competency.

**7. BAK-12/14 AIRCRAFT ARRESTING SYSTEM SUPPORT:****7.1. MAINTAINS BAK-12 PORTION OF THE SYSTEM:**

**7.1.1. PERFORMS PERIODIC INSPECTION.** Performs periodic inspection in accordance with applicable technical order to ensure the operational capability of the BAK-12 aircraft arresting system. Completes required

maintenance documentation associated with inspection, and coordinates with appropriate agency concerning barrier commission status.

**7.1.1.1. PERFORMS DAILY INSPECTION.**

**7.1.1.2. PERFORMS WEEKLY INSPECTION.**

**7.1.1.3. PERFORMS MONTHLY INSPECTION.**

**7.1.2. PERFORMS PREVENTIVE RECURRING MAINTENANCE:**

**7.1.2.1. REPLACES CABLE.** Replaces runway pendant cable after 24-months service.

**7.1.2.2. REPLACES TAPE.** Replaces purchase tape after 48-months service.

**7.1.2.3. TURNS TAPE.** Turns purchase tape end for end after 18-months service.

**7.1.2.4. CROPS TAPE.** Crops that length of tape between runway edge sheave and tape connector at 6-month interval.

**7.1.2.5. SYNCHRONIZES UNIT.** Synchronizes unit and proof tests hydraulic system at 3-month interval.

**7.1.2.6. SERVICES REWIND ENGINE.** Services engine at 3-month interval to include oil and filter change and required lubrication.

**7.1.3. PERFORMS UNSCHEDULED MAINTENANCE.** Performs any not required, unscheduled maintenance. Includes TCTO.

**7.1.4. PERFORMS MAJOR MAINTENANCE.** Performs major maintenance on arresting gear to include disassembly, inspection, overhaul, lubrication, and reassembly. Includes brake change and major overhaul.

**7.1.5. OPERATES AIRCRAFT ARRESTING SYSTEM (POST-ENGAGEMENT):**

**7.1.5.1. INSPECTS SYSTEM FOR SECURITY AND LEAK.**

**7.1.5.2. INSPECTS TAPE SHEAVE, TAPE, AND CABLE.**

**7.1.5.3. CHECKS FLUID LEVEL.**

**7.1.5.4. OPERATES REWIND TO RETRACT TAPE AND PRETENSION PENDANT.**

**7.1.5.5. BLEEDS HYDRAULIC SYSTEM.**

**7.1.5.6. COMPLETES MAINTENANCE DOCUMENTATION.**

**7.1.5.7. COORDINATES BARRIER COMMISSION STATUS WITH APPROPRIATE AGENCY.**

**7.1.6. ACTIVATES OR DEACTIVATES ARRESTING SYSTEM.** Activates or deactivates arresting system to accommodate wind directional change. Removes snow or ice from the vicinity of runway edge sheave and entrance to facility housing aircraft arresting system. Coordinates with appropriate agency concerning barrier commission status.

**7.2. MAINTAINS BAK-14 PORTION OF THE SYSTEM:**

**7.2.1. PERFORMS PERIODIC INSPECTION.** Performs periodic inspection in accordance with applicable technical order to ensure the operational capability of the hook cable support system.

**7.2.1.1. PERFORMS DAILY INSPECTION.**

**7.2.1.2. PERFORMS MONTHLY INSPECTION.**

**7.2.2. PERFORMS PREVENTIVE RECURRING MAINTENANCE.** Cleans support box with dry cleaning solvent, vacuums, and lubricates box. Sweeps through section and cleans as necessary. Cleans, repairs, and paints rusted surface in accordance with applicable directive.

**7.2.3. OPERATES HOOK CABLE SUPPORT SYSTEM (POST-ENGAGEMENT):**

**7.2.3.1. INSPECTS SUPPORT BLOCK.** Inspects support block for condition.

**7.2.3.2. OBSERVES OPERATION OF SYSTEM.** Observes operation of system in the up/down modes by use of the runway edge box control and tower control.

**7.3. PROVIDES TRAINING.** Provides training to the Fire Department personnel in BAK-12/14 system activation or deactivation reset procedures following engagement and inspection action. Issues certificate of competency.

**8. TRAVEL:**

**8.1. PERFORMS TRAVEL FOR INSPECTION.** Performs travel associated with inspection of the job site.

**8.2. PERFORMS PERSONNEL TRAVEL.** Travels to job site and returns or travels from job site to job site.

**9. UNIT TRAINING ASSEMBLY (UTA) PREPARATION.** Prepares training material to ensure military personnel will meet contingency requirements upon mobilization.

**INDIRECT:** Indirect work involves those tasks that are not readily identifiable with the work center's specific product or service. The major categories of standard indirect work are Supervision, Administration, Meetings, Training, Supply, Equipment Maintenance, and Cleanup. See AFMS 00AA for the standard indirect description.

STANDARD MANPOWER TABLE											
WORK CENTER/FAC			APPLICABILITY MAN-HOUR RANGE								
Power Production/448000			Y = 2 (Constant Manpower)								
AIR FORCE SPECIALTY TITLE	AFSC	GRADE	MANPOWER REQUIREMENT								
Electric Power Production	542X2	CIV	2								
TOTAL			2								
AIR FORCE SPECIALTY TITLE	AFSC	GRADE	MANPOWER REQUIREMENT								
TOTAL											